

IN THE CLAIMS

Kindly cancel Groups 2, 3 and 4, claims 14-33 without prejudice.

1. (Original) A method to determine the spatial distribution of magnetic particles in an examination area of an object of examination with the following steps:

a) Generation of a magnetic field with a spatial distribution of the magnetic field strength such that the examination area consists of a first sub-area with lower magnetic field strength and a second sub-area with a higher magnetic field strength,

b) Change of the particularly relative spatial position of the two sub-areas in the area of examination or change of the magnetic field strength in the first sub-area so that the magnetization of the particles changes locally,

c) Acquisition of signals that depend on the magnetization in the area of examination influenced by this change, and

d) Evaluation of signals to obtain information about the change in spatial distribution and/or the movement of the magnetic particles in the area of examination,

wherein the magnetic particles are introduced into and/or are present in the area of examination in a suspension, aerosol, in the form of a powder, especially diluted, with a casing or, especially, a thin coating, present in at least one capsule, or coupled to cells, particularly white or red blood corpuscles, immune cells, tumor cells or stem cells, or to ingredients, medication, antibodies, transplants or living organisms, or in the form of a, especially liquid, precursor form.

2. (Original) A method as claimed in claim 1, characterized in that the precursor form comprises a first aqueous solution containing FeCl_2 and FeCl_3 and a second aqueous solution containing NaOH , and in that the first and second solutions come into contact and form magnetic particles in the area of examination.

3. (Previously Presented) A method as claimed in claim 1, characterized in that the magnetic particles represent superparamagnetic particles or ferromagnetic particles, particularly in the

form of flakes or needles.

4. (Previously Presented) A method as claimed in claim 1, characterized in that the area of examination is present in the lungs, sinuses or other parts of the breathing system, in the digestive system, inner ears, bladder, vagina, mammary glands, circulation system, particularly the heart, liver, spleen, lymph system, bone marrow and especially in inflamed organs and/or tumors.

5. (Previously Presented) A method as claimed in claim 1, characterized in that the area of examination may comprise boreholes or materials made of plastic or ceramic.

6. (Previously Presented) A method as claimed in claim 1, characterized in that steps b) to d) are repeated at least once.

7. (Previously Presented) A method as claimed in claim 1, characterized in that the object of examination comprises a polymer material, especially a thermoplastic polymer, or polymer blend, a polymer melt, a micro-organism, a plant, a plant component, an organism or a component of an organism.

8. (Previously Presented) A method as claimed in claim 1, characterized in that at least a portion of the magnetic particles has anisotropic properties.

9. (Previously Presented) A method as claimed in claim 1, characterized in that the magnetic particle is a mono-domain particle whose magnetic reversal is implemented through Brownian rotation or Neel rotation.

10. (Previously Presented) A method as claimed in claim 1, characterized in that the magnetic particle is a hard or soft magnetic multi-domain particle.

11. (Previously Presented) A method as claimed in claim 1, characterized in that the magnetic particles comprise hard magnetic materials.

12. (Previously Presented) A method as claimed in claim 1, characterized in that the hard magnetic materials comprise Al-Ni, Al-Ni-Co and Fe-Co-V alloys as well as barium ferrite ($\text{BaO} \cdot 6\text{xFe}_2\text{O}_3$).

13. (Previously Presented) A method as claimed in claim 1, characterized in that the material used for encasing or coating can be degraded or dissolved thermally, chemically, bio-chemically, by means of electromagnetic radiation or ultrasound and/or mechanically.

14 - 33. (Cancelled).